

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A film-covered battery comprising:

~~a battery element having a configuration in which a positive electrode confront a negative electrode; and~~

~~a pair of laminate film films, in which each of which includes at least a heat-seal resin layer and a metal foil layer are laminated, for encapsulating said battery element with said heat-seal resin layer arranged on an inner side and for sealing said battery element by heat-sealing an outer periphery of said laminate film;~~

a battery element partially enclosed between the pair of laminate films;

the laminate films each including a first area at an outer periphery of the laminate film and where the laminate film extends beyond the battery element, the first areas being heat-sealable to one another;

the laminate films each including a second area inside the first area and in which the laminate film contacts the battery element;

wherein the heat-sealed resin layer includes a cross-linked structure is formed in said ~~heat-seal resin layer of said laminate film in at least an~~ the second area in which said heat-seal resin reaches a temperature equal to or greater than the melting point at the time of heat sealing said laminate film with the exception of an outer periphery of a heat-sealed area and in which said laminate film contacts a part that is sealed inside said laminate film.

2. (currently amended): A film-covered battery according to claim 1, wherein said ~~heat-sealed~~first area is formed in an area that includes an outer periphery of ~~an~~the second area in which said cross-linked structure is formed.

3. (currently amended): A film-covered battery according to claim 1, wherein:
the battery element includes a positive electrode and a negative electrode that confronts the positive electrode;

lead terminals that extend outside said laminate ~~film~~films are connected to each of said positive electrode and negative electrode; and

~~the part that is sealed inside said laminate film includes said battery element and portions of said lead terminals~~ are sealed inside the pair of laminate films.

4. (original): A film-covered battery according to claim 1, wherein said cross-linked structure is formed by irradiating said laminate film by an electron beam.

5. (currently amended): A film-covered battery according to claim 4, wherein at least the second area of said heat-seal resin layer includes a polyolefin.

6. (currently amended): A film-covered battery according to claim 4, wherein at least the second area of said heat-seal resin layer is a material ~~in which~~including an electron beam-reactive compound ~~is added to and~~ an electron beam-degradable resin.

7. (original): A film-covered battery according to claim 1, wherein said battery element is a chemical battery element or a capacitor element.

8. (withdrawn): A fabrication method of a film-covered battery in which a battery element having a configuration in which a positive electrode confront a negative electrode is encapsulated in a laminate film in which at least a heat-seal resin layer and a metal foil layer are laminated and sealed by heat-sealing a periphery of said laminate film, said fabrication method comprising the steps of:

forming a cross-linked structure in said heat-seal resin layer in at least a area of said laminate film in which said heat-seal resin layer reaches a temperature equal to or greater than the melting point at the time of heat-sealing said laminate film with the exception of an outer periphery of a heat-sealed area, and an area in which said laminate film contacts a part that is sealed;

encapsulating said battery element in said laminate film in which the cross-linked structure have been formed in said heat-seal resin layer with said heat-seal resin layer as an inner surface; and

heat-sealing the outer periphery of said laminate film that encapsulates said battery element to seal said battery element.

9. (withdrawn): A fabrication method of a film-covered battery according to claim 8, wherein the step for heat sealing the outer periphery of said laminate film includes heat-sealing an area that includes an outer periphery of an area in which said cross-linked structure has been formed.

10. (withdrawn): A fabrication method of a film-covered battery according to claim 8, wherein said step of forming cross-linked structure includes the steps of:
masking an area of said laminate film in which the cross-linked structure is not formed;
and
irradiating said laminate film that has been masked by an electron beam.

11. (withdrawn): A fabrication method of a film-covered battery according to claim 10, further including a step of forming in said laminate film a depression for accommodating said battery element before said step of forming the cross-linked structure.

12. (new): A film-covered battery according to claim 1, wherein the cross-linked structure is not formed in the first areas of each of the laminate films.

13. (new): A film-covered battery according to claim 1, wherein the second area of each of the laminate films is substantially an entire area surrounded by the first area of each of the laminate films.

14. (new): A film-covered battery according to claim 1, wherein the second area of each of the laminate films is formed substantially only in an area where said laminate film contacts the battery element that is sealed inside said laminate film.

15. (new): A film-covered battery according to claim 5, wherein at least the second area of the heat-seal resin layer is made of one of the group consisting of: a polyolefin homopolymer, a polyolefin copolymer, and a resin comprising repeating groups of $-(CH_2-CHX)-$.

16. (new): A film covered-battery according to claim 1, wherein the heat-seal resin layer of each of the laminate films is made of a resin capable of heat-sealing and allowing the formation of cross-linked structures when irradiated by an electron beam.

17. (new): A film-covered battery comprising:
a pair of laminate films each of which includes at least a heat-seal resin layer and a metal foil layer;

a battery element partially enclosed between the pair of laminate films;
the laminate films each including a first area at an outer periphery of the laminate film and where the laminate film extends beyond the battery element, the first areas being heat-sealable to one another;

the laminate films each including a second area inside the first area and in which the laminate film contacts the battery element;

wherein the second area of the heat-sealed resin layer is formed of a material having a lower creep rate and creep strength relative to that of a material forming the first area of the heat-sealed resin layer.

18. (new): A film-covered battery obtained by:

forming a pair of laminate films each having a heat-seal resin layer and a metal foil layer, wherein the heat-seal resin layer forms cross-linked structures when exposed to electron beam radiation;

irradiating an exposed area of at least one of the laminate films, the exposed area disposed inside a predetermined heat-seal area to form cross-linked structures within the exposed area and at a location where the battery contacts the laminate film;

placing a battery element between the pair of laminate films; and

applying heat and pressure to the predetermined heat-seal area to seal the battery within the pair of laminate films.

19. (new): A film-covered battery obtain by the process set forth in claim 17, further comprising:

determining target areas of the laminate film that reach a threshold temperature during the applying step,

wherein the threshold temperature is a temperature that is greater than or equal to the melting point of the heat-seal resin layer free from the cross-linked structure; and

wherein the exposed area is defined by an intersection of the target areas that reach the threshold temperature and the location where the battery contacts the laminate film.